

The development of a novel serodiagnostic test for the detection of ascariasis in fattening pigs.

Vlaminck J., Vercruysse J., Geldhof P.
Laboratory of Parasitology, Ghent University.

Every day, pigs all over the world get infected with the intestinal parasite *Ascaris suum*. As a consequence, many farmers see their profits decreased by the negative impact these roundworms have on the growth and general health of their pigs. However, due to the subclinical nature of the disease together with the lack of proper diagnostic tests, ascariasis often remains undiagnosed. The development of new and improved tools for the detection of roundworm infections in pigs is therefore necessary. Here we describe the development of a novel immuno-diagnostic ELISA using the purified *A. suum* haemoglobin (AsHb) molecule as an antigen. Initial validation of the test using sera of 190 piglets after 7 and 14 weeks of experimental infection with *A. suum* demonstrated that the AsHb ELISA is able to detect long-term exposure to *A. suum* with high sensitivity and specificity (99.5% and 100.0% respectively). This serological test proved to be more sensitive than faecal examination on week 7 and 14 of the experiment (99.5% and 100% compared to 59.5% and 68.4% respectively). Additionally, analysis of sera from 14 Flemish fattening farms showed significant correlations between the mean ODr results and the average daily gain and the days to market ($\rho=-0.761$; $P<0.05$ and $\rho=0.732$; $P<0.01$ respectively). ELISA tests performed on sera from fattening farms show highest numbers of *A. suum* positive farms in France (64%) followed by Belgium (55%) and The Netherlands (45%). This new ELISA could offer farmers and veterinarians an easy tool to assess the *Ascaris* status of their herd.